Healthy Environment

Everything for hospitals

Airfree® AIR PURIFIERS

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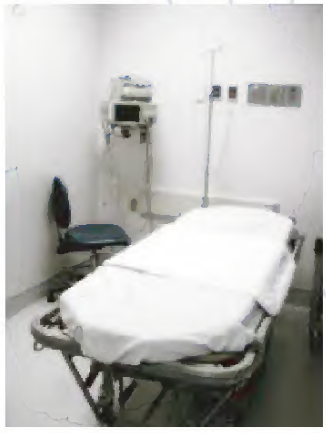
Hospital Indoor Air Quality
A Patient's Death Threat

The Hospital acquired infection scenario

Studies on hospital acquired infections began more than 150 years ago with Ignaz Semmelweis[1] and Florence Nightingale[2] and contributed to the advance of microbiologic and prophylactic actions in hospital enviroments. Despite the increase of asepsis practices, hospital infections are still considered a public health concern.

Hospital indoor air, a micro-organism contamination mean



Many studies[6,7,8] show that bio-aerosols (micro-organism conglomerates in suspension in the air) play an important role on the acquisition of infections being calculated as responsible for 10 to 20% of those cases[6].

The pathogens can be sprayed in many ways, via natural or forced ventilation system, water spray, skin scales released by patients and medical staff, coughing and sneezing[6]. Studies also show that surgical staff members can liberate between 1,500 to 50,000 bacteria per minute[9] and those pathogens may stay in suspension in the air for long periods of time. Studies reveal that 80 to 90% of all surgical wound infections are related to bad air quality and that cleaner air translates into in lower infection risk.

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To prevent is better than to remedy

Hospital infections not only result in high financial cost but also in high number of lost lives. Therefore, better than the clinical treatment itself, the prevention of hospital infections is the best strategy as being cheaper and more effective.

The annual cost of treatment and hospitalization in England accounts for £1bn. According to the NAO (National Audit Office) 2000 report, the NHS could have saved £150m if preventive actions involving hospital hygiene and infection control had been taken.

Some important pathogens

Staphylococcus

"Staphylococus aureus" is the most common bacteria in hospital infections across the world[9] and are especially linked to surgical wound infections[10] that represent 11% of all nosocomial infections in England.

Other bacterial pathogens have high relevance in airborne transmitted diseases and are well studied like the "Streptococcus spp" and "Pseudomonas aeruginosa". Airborne pathogens are commonly related to respiratory tract infections which correspond to 23% of all hospital infections in England.

Aspergillus

"Aspergillus spp" is the most common fungus acquired trough air transmission in hospitals.

The "conidius propagulus" small size allows it to be in suspension in the air for long periods of time, remaining viable for months, even in low humidity places.[13] Studies estimate that 75% of the Invasive "Aspergillosis" cases result in death, especially due to the difficulty in diagnosing it. The daily therapy cost is extremely high over £701, resulting in an average therapy cost of £ 9.814(*) per patient. The therapy cost of just one invasive "Aspergillosis" patient is approximately equivalent to 60 Airfree units

*considering a 70 kg patient. Approximate cost of AWP (of Lamb) is US$188 per 50 mg vial. Typical dose is 5.0 mg/kg/day. Estimated daily cost per patient US$1,316.

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Airfree® proven efficiency

Airfree air purifier is proven to drastically reduce the airborne microbial charge.

In many microbiologic tests in real life conditions performed by ISO 17025 certified independent laboratories, Airfree airborne bacterial and fungal charge reduction in the environment is close to 90%.

Airfree reduces toxic Ozone as well.

The extraordinary efficiency of patented Airfree technology combines excellent thermo dynamics in conjunction with the high efficiency of its ceramic core that captures and incinerates airborne microorganisms at temperatures around 400 F. In fact, just 105.8F is required to denaturize a series of thermo-sensitive proteins found in many cell regions, especially in the nucleus.[19] Independent tests show that Airfree can reduce up to 96% of the number of airborne bacteria and fungus in 500 sq ft contaminated rooms with people working in it.

Airfree additional advantages

- Destroys micro-organisms regardless of its virulence and size
- Reduces toxic ozone
- Totally silent, does not disturb patients
- No maintenance required, no toxic filters to replace
- No installation required, “plug in” unit
- Low purchase and operating cost

It is reasonable to presume that given Airfree extraordinary airborne bacteria and fungus contamination reduction rate a wide number of infections could be avoided with the installation of Airfree.

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Airfree® P models

Efficient: Airfree is tested in real working environments with people in them by credible ISO 17025 independent laboratories and universities in several countries.Airfree destroys any microorganism such as mold spores, bacteria, viruses, and dust mite allergens when passing through its patented high efficiency thermo dynamic sterilizing ceramic core known as ThermoDyn regardless of how hazardous and small they might be.

Silent: No sound emission.

Exclusive: Airfree uses just heat ThermoDyn technology to destroy and incinerate airborne microorganisms. No fiber glass filters, triclosan coated paper or any kind of material that can be harmful to those operating or wasting it.

Ozone Reduction: Airfree exclusive ThermoDyn technology is the only one reducing ozone while destroying microorganisms.

Economic: Airfree model electric consumption is lower that a 50W light bulb. No replacement parts required like filters that may cost hundreds of dollars a year.

Easy Installation: Just place Airfree on the floor and plug it into the nearest electric outlet. No need for maintenance or special cleaning.

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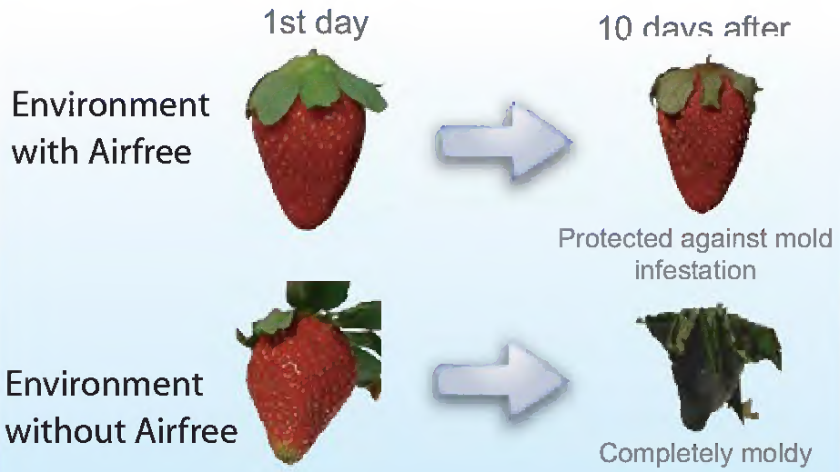
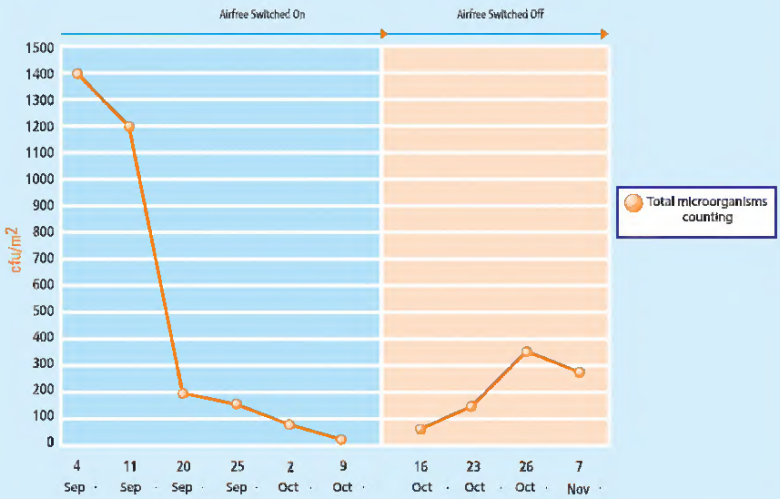
See the strawberries 10 day test*:



*test made in two separated closed chambers

Efficiency Test: microorganism reduction



Test realized by SGS Natec - Germany - Test M00-4990
Independent Laboratory ISO 17025

See the complete list of test reports at:

www.airfree.com

This guide had Cristiane Minussi's collaboration, USP biologist professional responsible for the microbiological nature information.

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